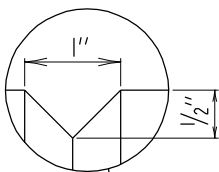
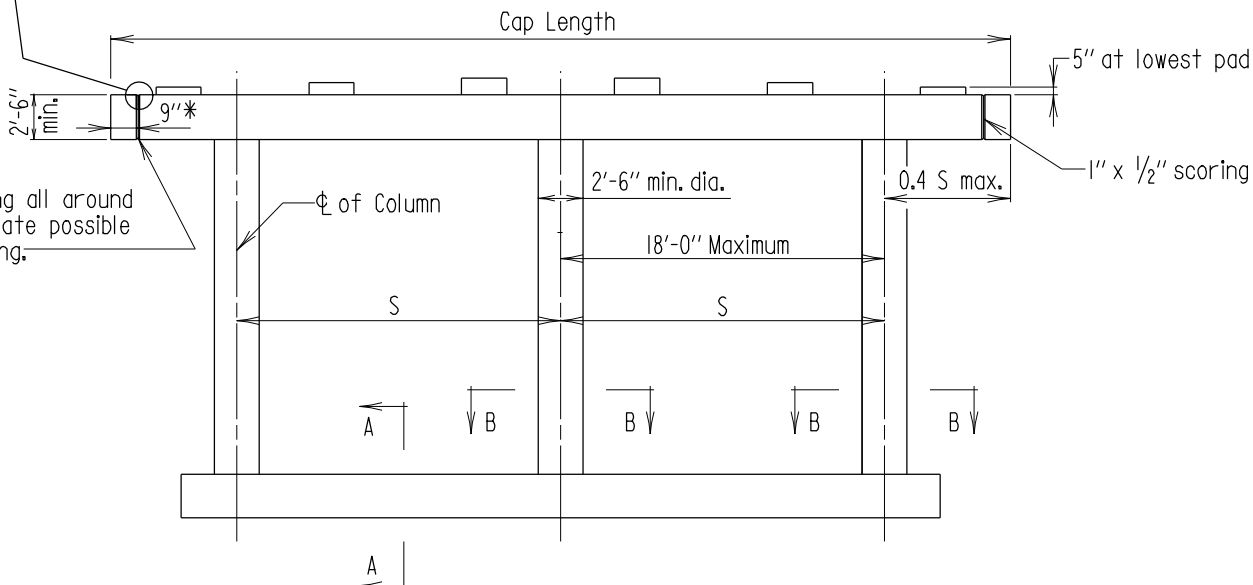


ALTERNATE CAP DETAIL

Scale: $\frac{3}{32}$ " = 1'-0"



1" x 1/2" scoring all around cap to facilitate possible future widening.



ELEVATION

Scale: $\frac{3}{32}$ " = 1'-0"

* All main bars to be extended into this area so that the welded extension indicated on M(6.01)-75-12 can be utilized. Designer must keep in mind this might necessitate more steel than required for original design.

Note:

- Standard is for roadway widths and skew angle requiring a cap length less than 50', measured along center line of pier.
- When bridge seat elevations are such that the height of any pad becomes greater than 1'-0" and the sloping of cap can eliminate or alleviate this condition then cap shall be sloped as indicated in "Alternate Cap Detail".
- For Section A-A and B-B see sheet 4 of 4.

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7-26-06	.

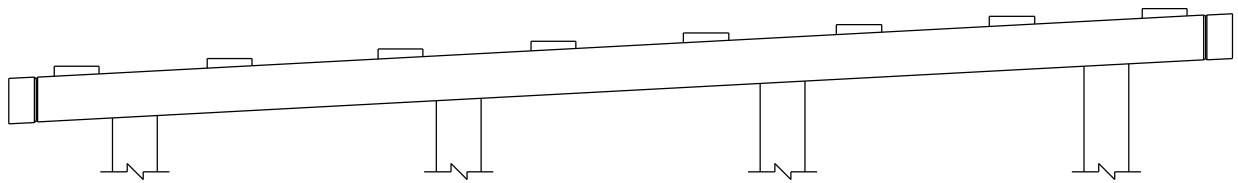
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DESIGN CRITERIA FOR
TYPICAL REINFORCED CONCRETE PIER
(CAP LENGTH LESS THAN 50')

STANDARD NO. BR-SB(2.01)-81-125

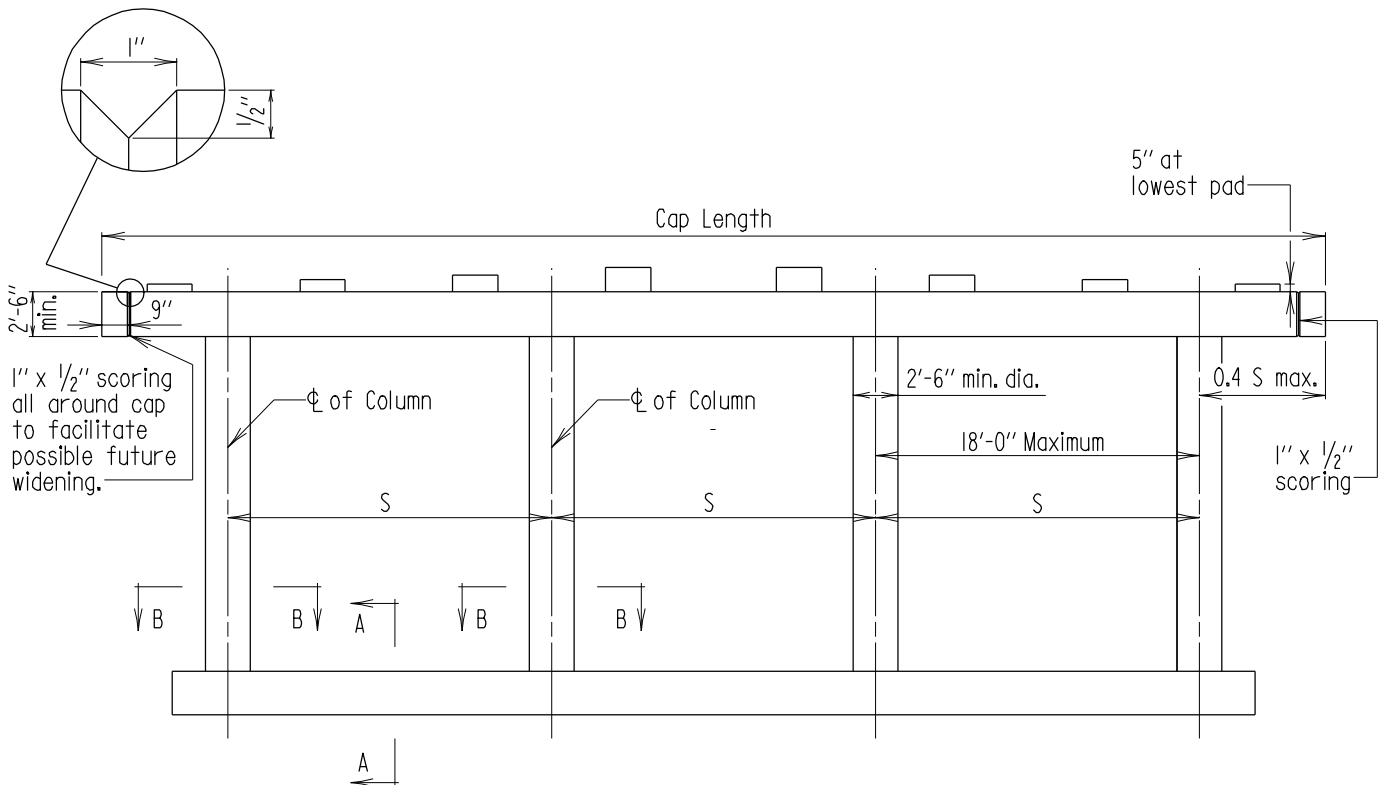
SHEET 1 OF 4

SUBSTRUCTURE - PIER



ALTERNATE CAP DETAIL

Scale: $\frac{3}{32}$ " = 1'-0"



ELEVATION

Scale: $\frac{3}{32}$ " = 1'-0"

* All main bars to be extended into this area so that the welded extension indicated on M(6.01)-75-12 can be utilized. Designer must keep in mind this might necessitate more steel than required for original design.

Note:

1. Standard is for roadway widths and skew angle requiring a cap length between 50' and 68', measured along center line of pier.
2. When bridge seat elevations are such that the height of any pad becomes greater than 1'-0" and the sloping of cap can eliminate or alleviate this condition then cap shall be sloped as indicated in "Alternate Cap Detail".
3. For Section A-A and B-B see sheet 4 of 4.

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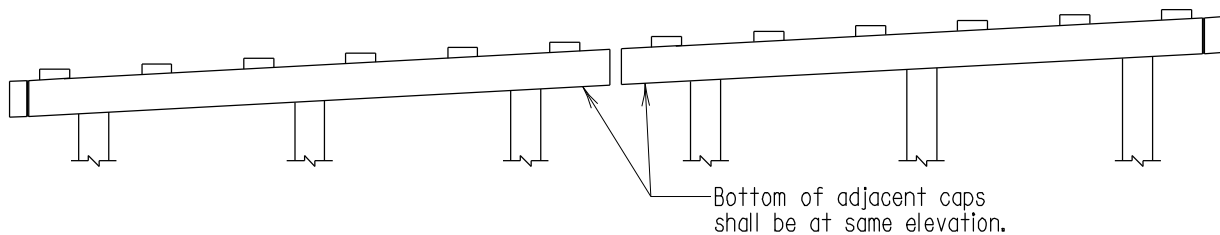
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DESIGN CRITERIA FOR
TYPICAL REINFORCED CONCRETE PIER
(CAP LENGTH 50' - 68')

STANDARD NO. BR-SB(2.01)-81-125

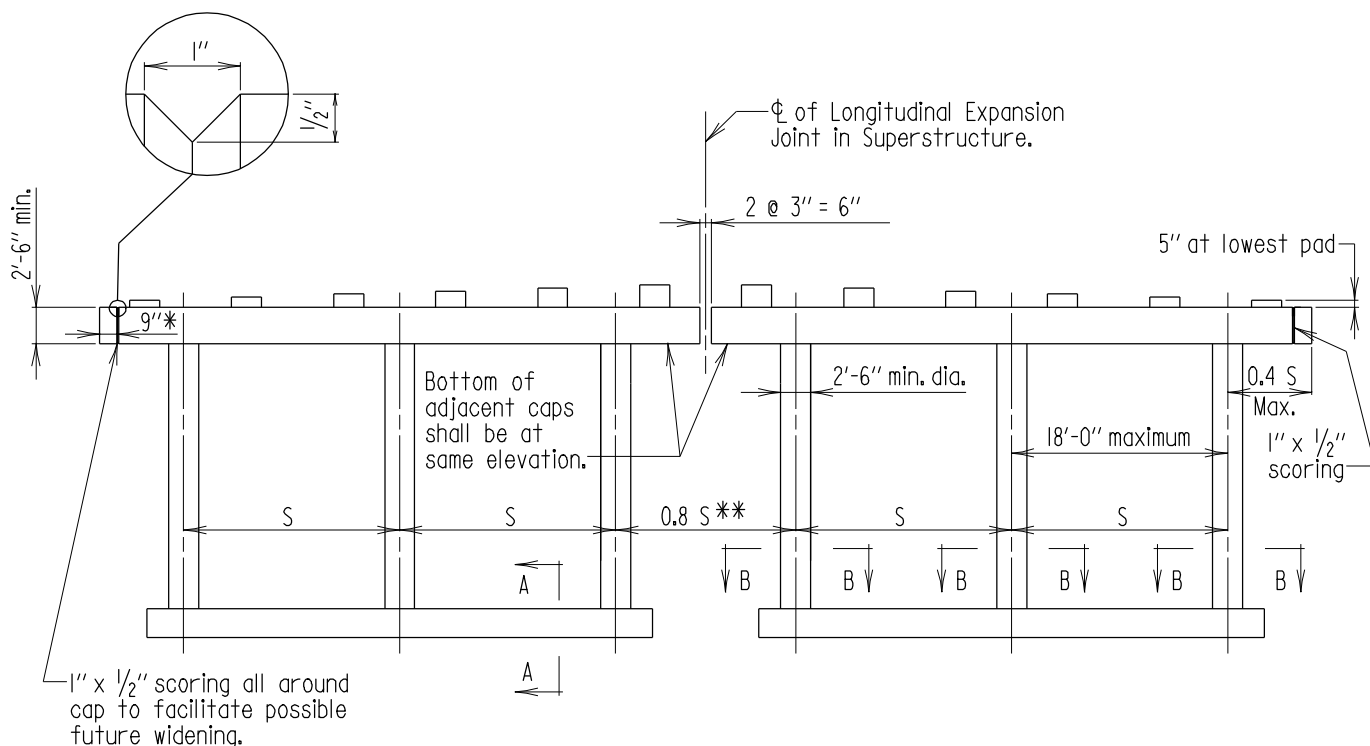
SHEET 2 OF 4

SUBSTRUCTURE - PIER



ALTERNATE CAP DETAIL

Scale: $\frac{3}{32}$ " = 1'-0"



ELEVATION

Scale: $\frac{3}{32}$ " = 1'-0"

* All main bars to be extended into this area so that the welded extension indicated on M(6.01)-75-12 can be utilized. Designer must keep in mind this might necessitate more steel than required for original design.

** If possible

Note:

- Criteria for individual pier units shall be as shown on sheets 1 and 2 of 4.
- When bridge seat elevations are such that the height of any pad becomes greater than 1'-0" and the sloping of cap can eliminate or alleviate this condition then cap shall be sloped as indicated in "Alternate Cap Detail".
- Whenever possible the S dimensions shall remain equal.
- For Section A-A and B-B see sheet 4 of 4.

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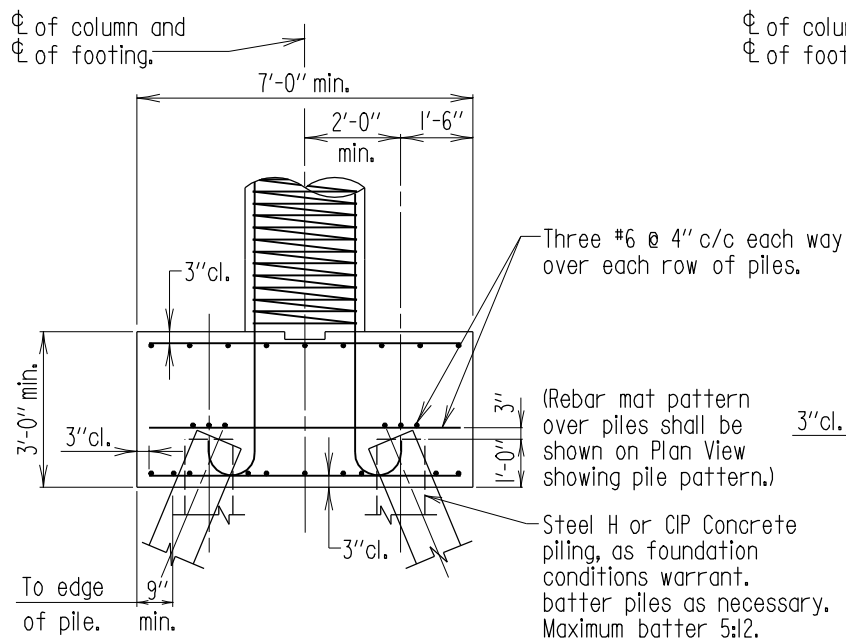
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DESIGN CRITERIA FOR
TYPICAL REINFORCED CONCRETE PIER
(CAP LENGTH LESS THAN 50')

STANDARD NO. BR-SB(2.01)-81-125

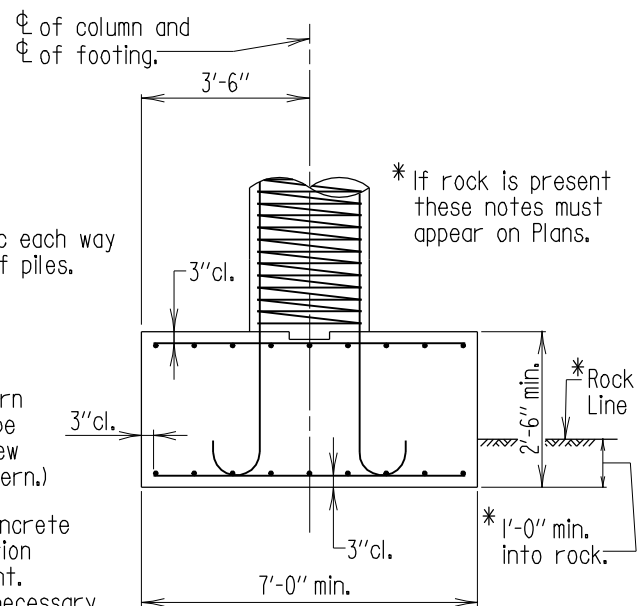
SHEET 3 OF 4

SUBSTRUCTURE - PIER



SECTION A-A WITH PILES

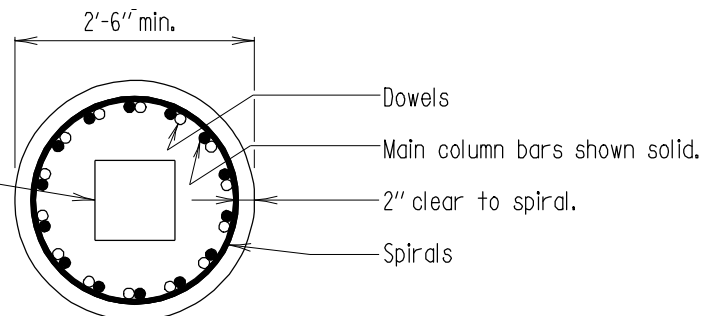
Scale: $\frac{1}{4}" = 1'-0"$



SECTION A-A SPREAD FOOTING

Scale: $\frac{1}{4}" = 1'-0"$

10" x 10" x Minimum Depressed Key, centered in column at top and bottom of column.



SECTION B-B

Scale: $\frac{1}{2}" = 1'-0"$

MAXIMUM NUMBER OF MAIN COLUMN BARS			
Column Diameter	#9	#10	#11
2'-6"	16	15	14
2'-8"	18	16	15
2'-10"	19	18	17
3'-0"	20	19	18
3'-2"	22	20	19
3'-6"	25	23	22

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Note:

1. Reinforcing steel for column spirals shall be cold drawn steel conforming to ASTM A 82.
2. The design bearing pressure for spread footings shall be shown on applicable Pier Sheet thus: "Maximum Design Bearing Pressure for Pier ____ is ____ Tons/s.f."

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1-22-01	

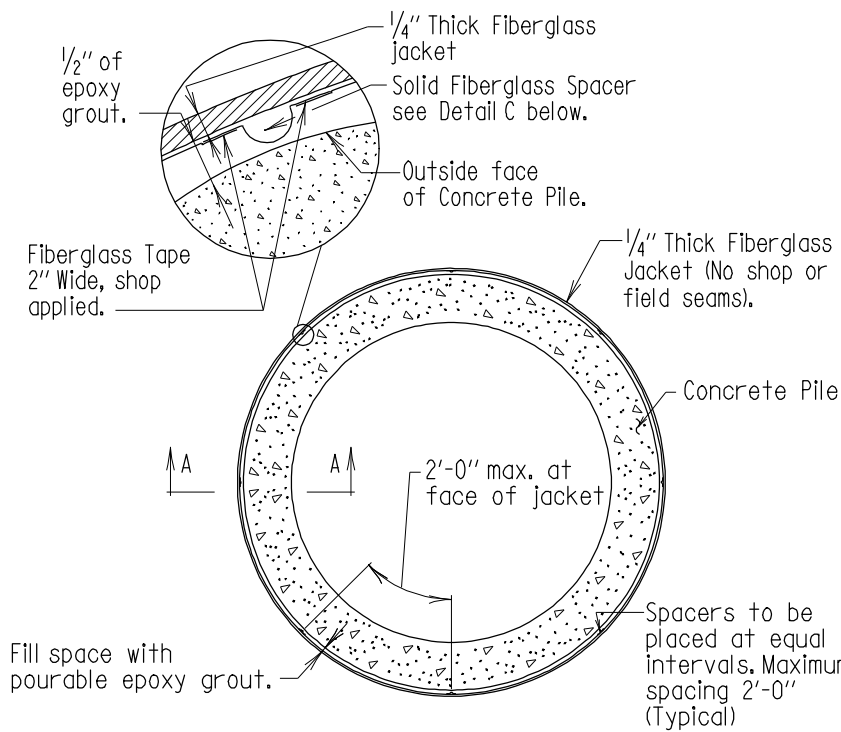
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DESIGN CRITERIA FOR
TYPICAL REINFORCED CONCRETE PIER

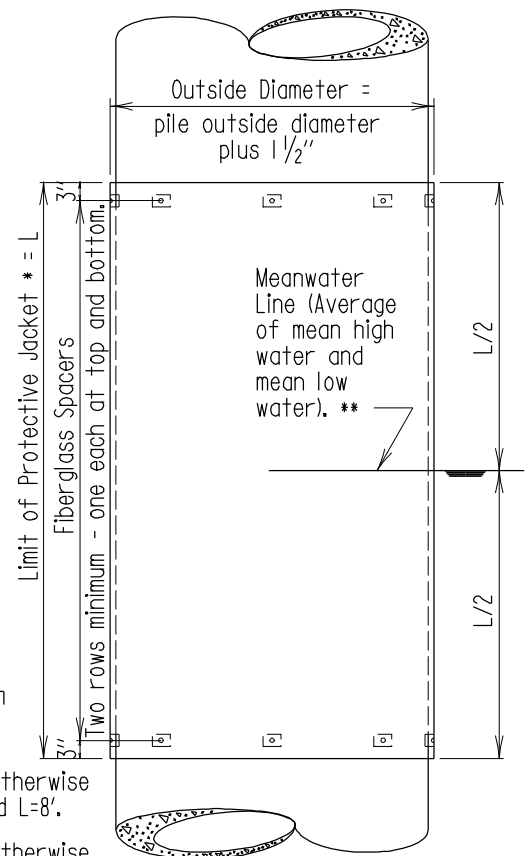
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SHEET 4 OF 4

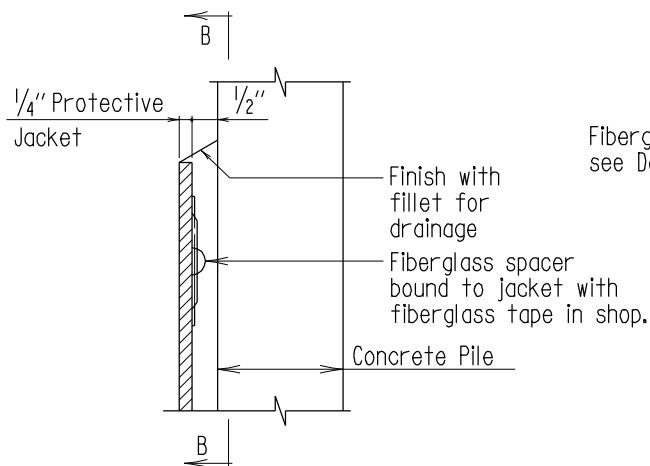
SUBSTRUCTURE - PIER



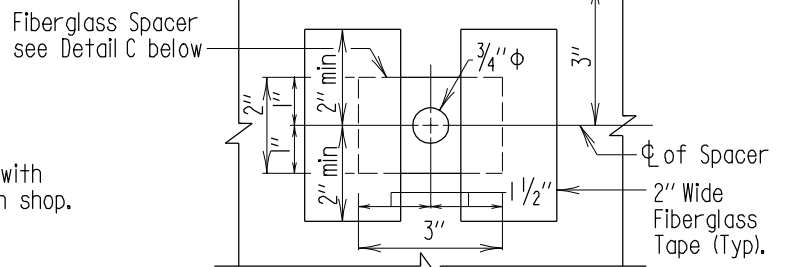
PLAN
Scale: 1/2" = 1'-0"



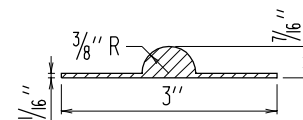
ELEVATION
Scale: 3/8" = 1'-0"



SECTION A-A
Scale: None



SECTION B-B
Scale: None



DETAIL C
Scale: None

Notes:

1. No vertical joints allowed.
2. Jackets to be placed before cap or footer is poured.
3. Fiberglass shall conform to 921.11.
4. For epoxy grout material requirements see Special Provisions.
5. Inside of jacket shall be thoroughly cleaned.
6. Jacket pile areas to be cleaned just prior to placing jacket refer to Section 418.

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DATE: 6-8-90

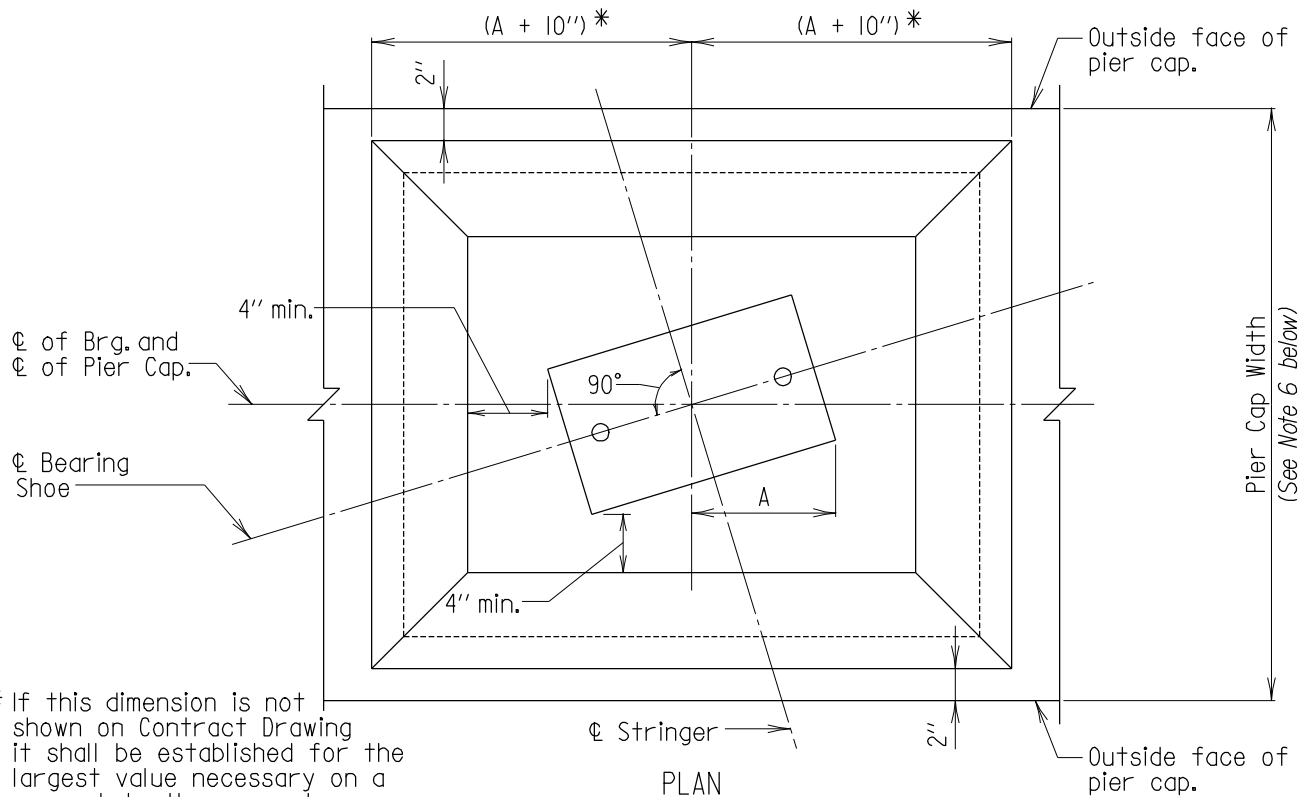
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FIBERGLASS JACKET FOR
NEW CYLINDER PILE

STANDARD NO. BR-SB(6.08)-86-172

SHEET 1 OF 1



* If this dimension is not shown on Contract Drawing it shall be established for the largest value necessary on a support to the nearest higher inch, and the same dimension used for every pad on that support.

PLAN
Scale: 1" = 1'-0"

For concrete surface preparation see 420.03.07(c).

For anchor bolt dimensions and locations see bearing details.

6" x 6" chamfer for all exterior bearing pads unless otherwise noted on plans.

Top of bearing pad.

Dashed lines indicate 2" x 2" chamfer for all interior bearing pads.

Top of pier cap.

May be a roughened construction joint for pads with reinforcing.
May be poured monolithically for pads up to 12" height.

5" min. interior brg. pad
8" min. exterior brg. pad

ELEVATION

Scale: 1" = 1'-0"

Slanted lettering indicates notes
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Notes:

1. Anchor bolts shall be set in round holes drilled or cored into the masonry.
2. The drilled or cored holes shall have a diameter of at least 1" larger than the diameter of the bolts.
3. Holes shall be filled with nonshrink grout in accordance with 902.11(c) T-160.
4. For size of pad see pertinent substructure sheets, if not available see note in plan above.

5. Space reinforcing steel to clear anchor bolts.
6. If it is necessary to increase the pier cap width beyond what is required for design in order to provide the 6" x 6" chamfer, then the chamfer at the exterior pad will be the maximum which can be provided using the pier cap width required for design.

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5-18-93	.
1-4-94	.
FHWA APPROVAL	1-22-01
DATE: 6-8-90	7-26-06

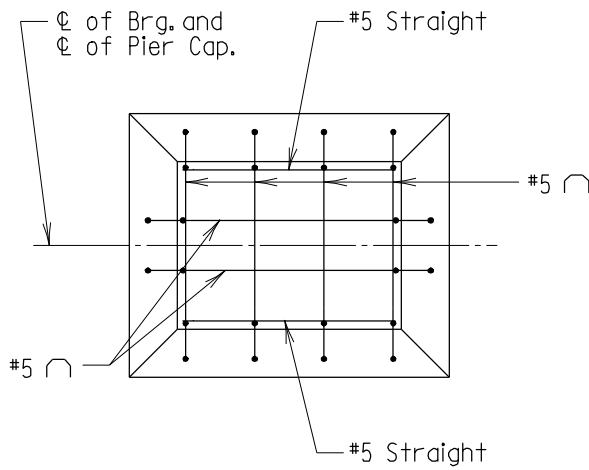
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BEARING PAD (FOR SPECIAL PIERS) WHERE ONLY
A SINGLE SHOE IS REQUIRED ON SUPPORT

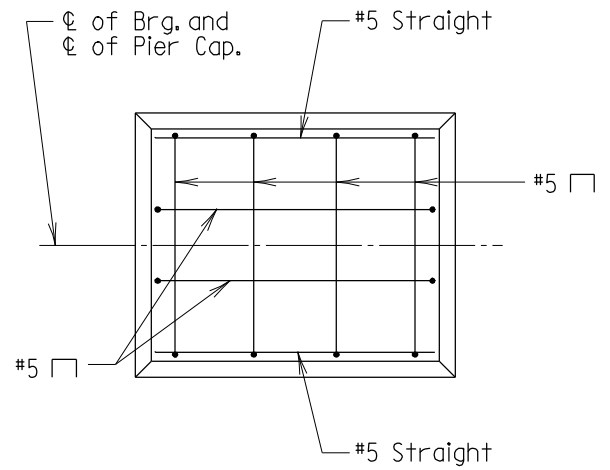
STANDARD NO. BR-SB(6.09)-85-175

SHEET 1 OF 2

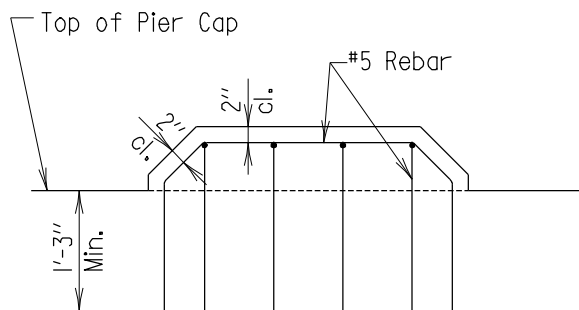
SUBSTRUCTURE PIER



PLAN



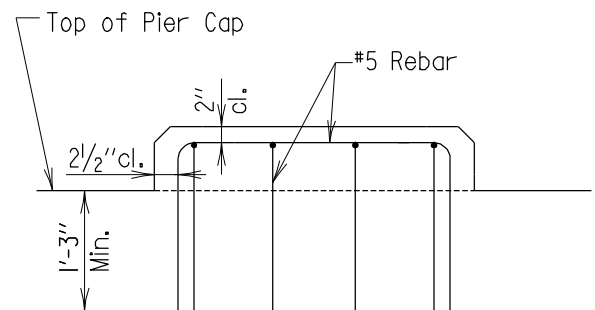
PLAN



ELEVATION

EXTERIOR BEARING PAD

Scale: $\frac{1}{2}'' = 1'-0''$



ELEVATION

INTERIOR BEARING PAD

Scale: $\frac{1}{2}'' = 1'-0''$

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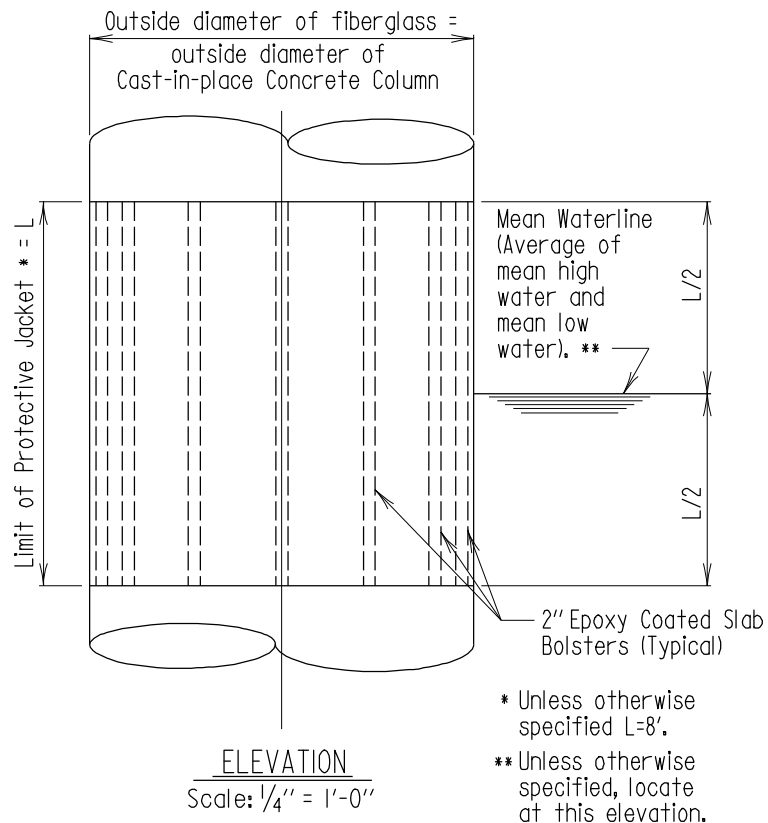
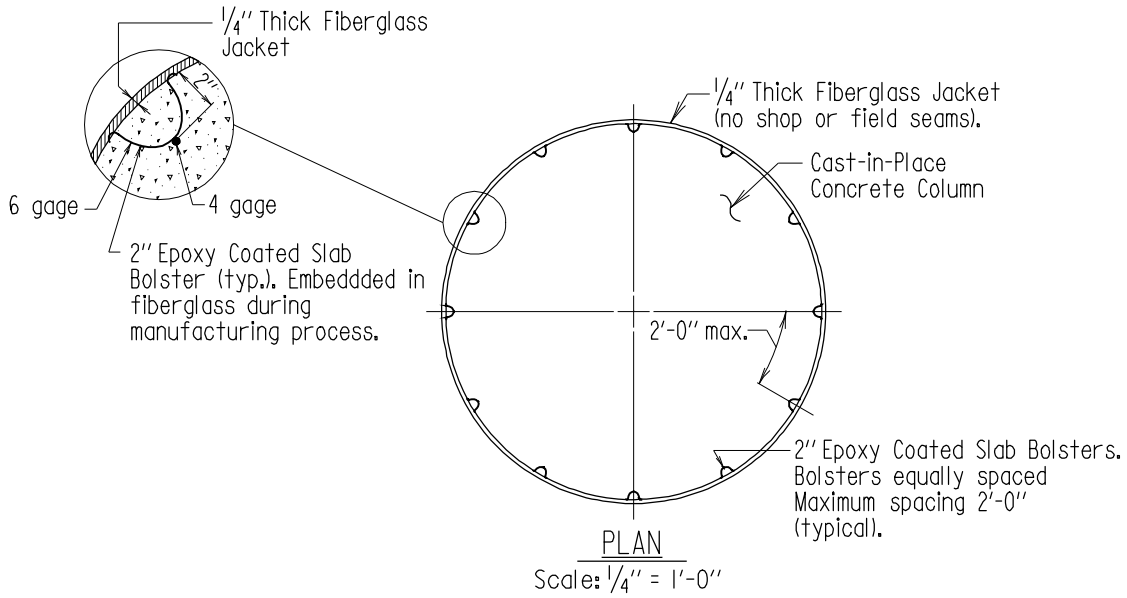
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BEARING PAD (FOR SPECIAL PIERS) WHERE ONLY
A SINGLE SHOE IS REQUIRED ON SUPPORT

STANDARD NO. BR-SB(6.09)-85-175

SHEET 2 OF 2

SUBSTRUCTURE PIER



Notes:

1. For fiberglass requirements see 921.11.
2. For other fiberglass jacket requirements see Special Provisions.
3. Inside of jacket shall be thoroughly cleaned.

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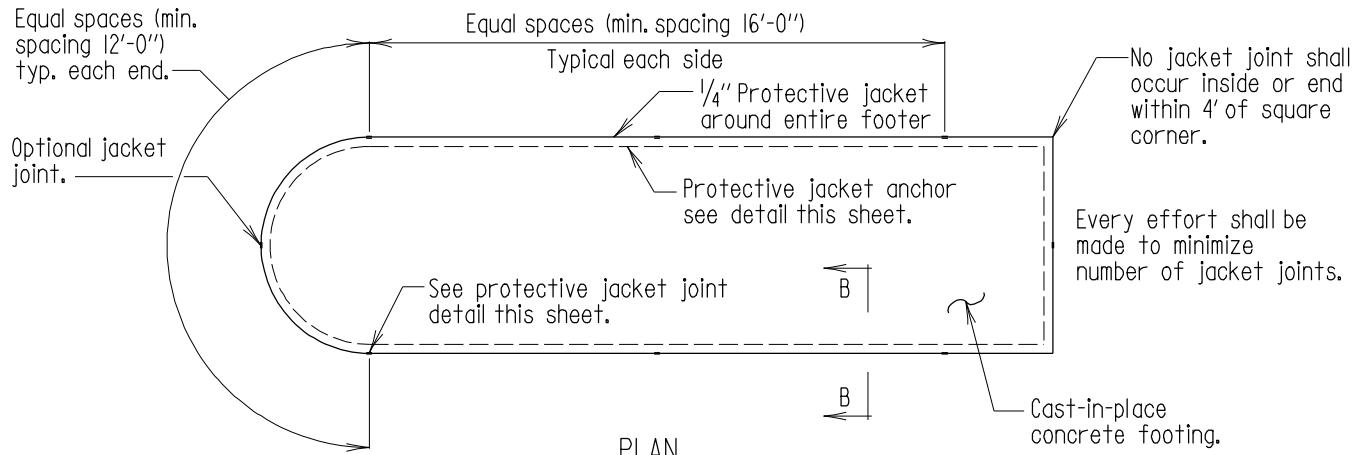
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FIBERGLASS JACKET FOR
CAST-IN-PLACE CONCRETE COLUMN

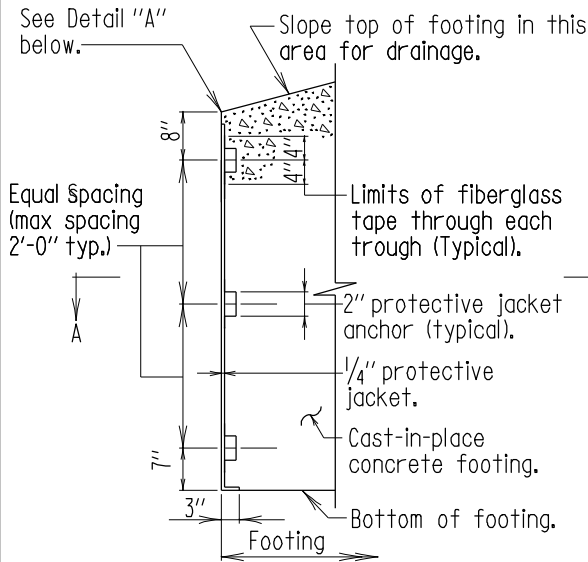
STANDARD NO. BR-SB(6.12)-86-184

SHEET 1 OF 1

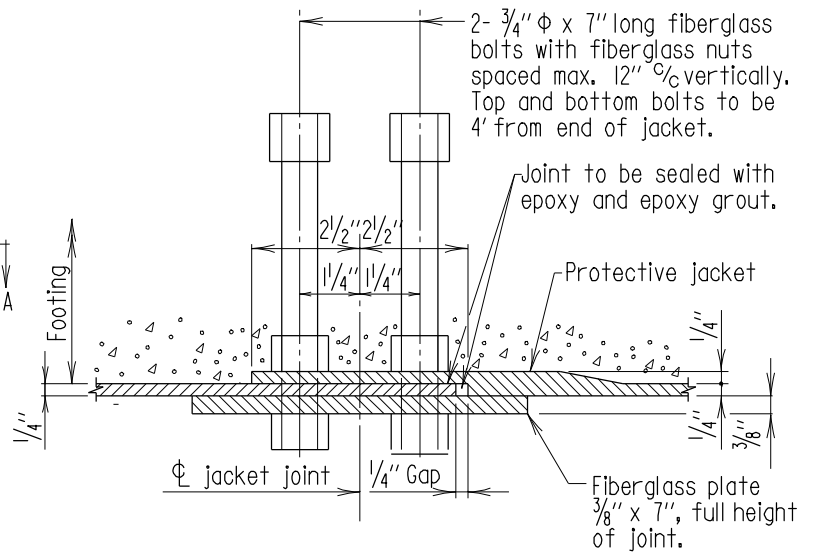
SUBSTRUCTURE PIER



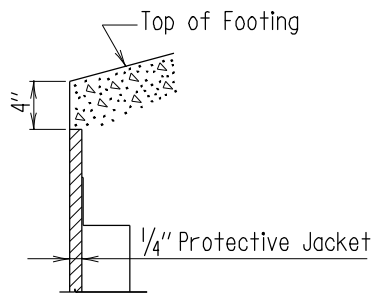
PLAN
Scale: None



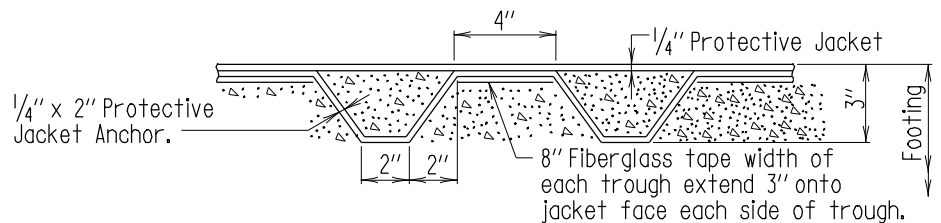
SECTION B-B
Scale: $\frac{3}{8}" = 1'-0"$



PROTECTIVE JACKET JOINT DETAIL
Scale: $3" = 1'-0"$



DETAIL A
Scale: None



SECTION A-A
Scale: $1\frac{1}{2}" = 1'-0"$

Notes:

1. For Fiberglass requirements see 921.11.
2. For other fiberglass and epoxy grout material requirements see Special Provisions.
3. Inside of jacket shall be thoroughly cleaned.

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11-17-97	
1-22-01	

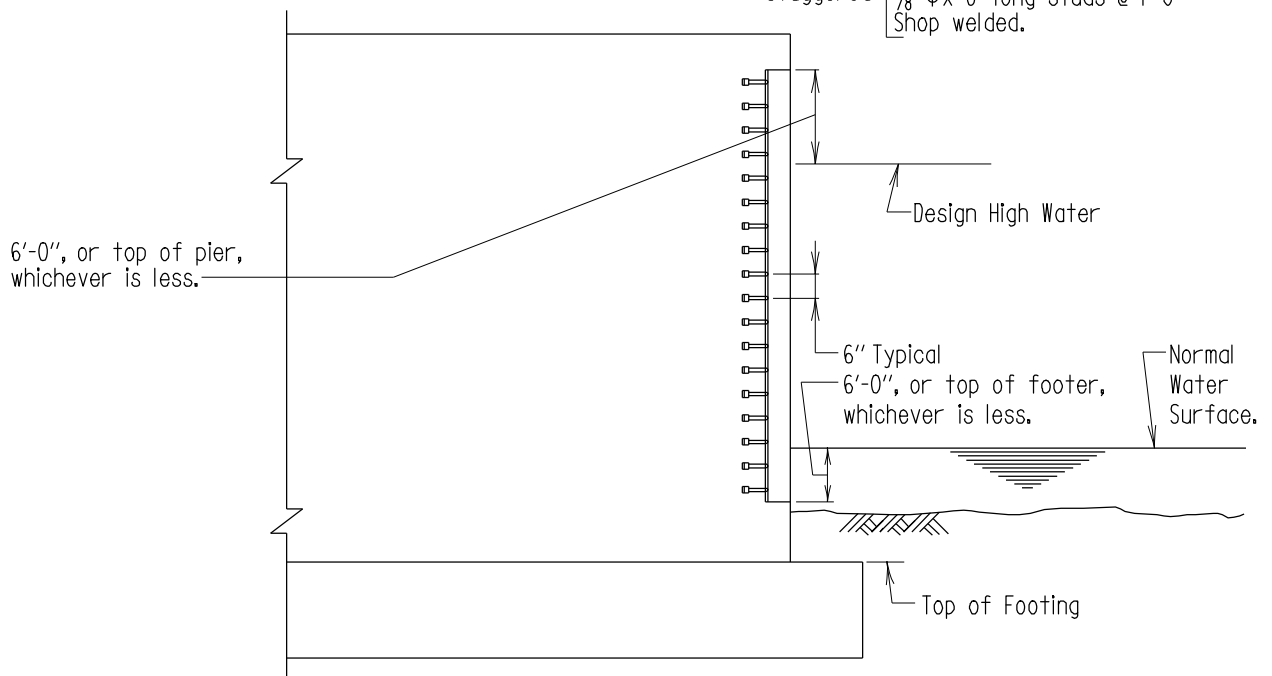
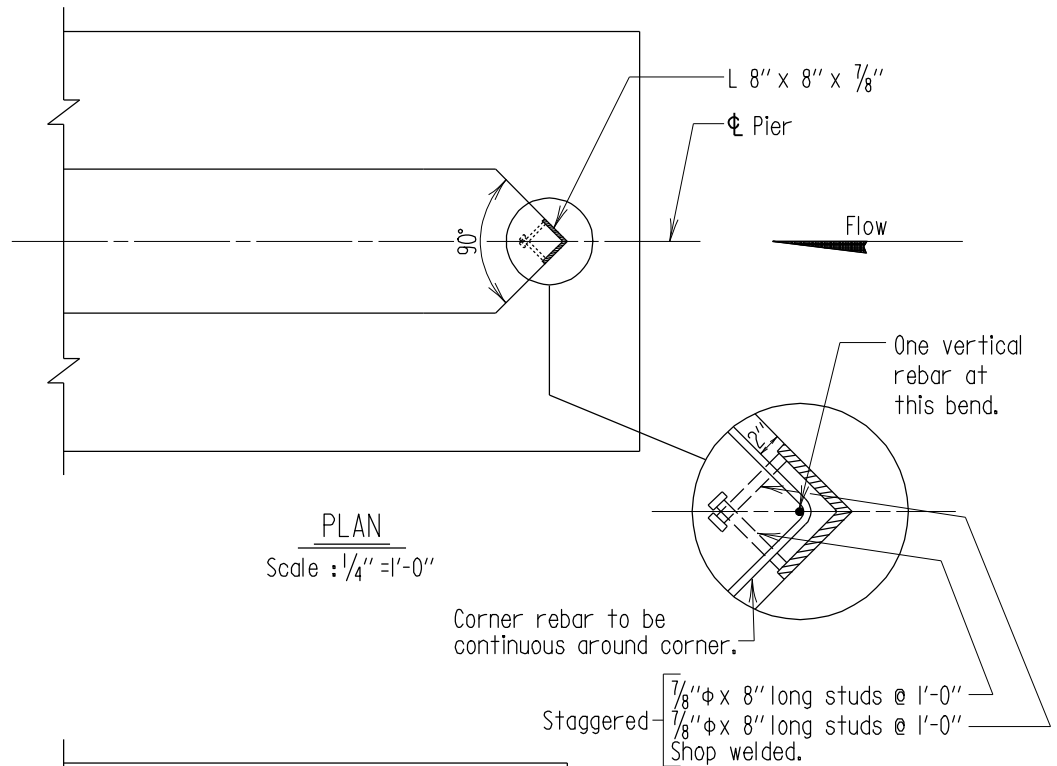
FHWA APPROVAL
DATE: 6-8-90

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FIBERGLASS JACKET FOR
CAST-IN-PLACE CONCRETE FOOTING

STANDARD NO. BR-SB(6.11)-86-185

SHEET 1 OF 1



Note:

1. Angle to be steel conforming to ASTM A-36.
2. Angle to be hot dipped galvanized, after fabrication, in accordance with ASTM A-123.

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DATE: 12-12-79	.

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NOSE ANGLE FOR SOLID SHAFT WATER PIER

STANDARD NO. BR-SB(8.01)-79-197

SHEET 1 OF 1

SUBSTRUCTURE PIER